

Abstract

The use of natural fibers has increased greatly driven by environmental concerns of synthetic fibers. The most commonly used natural fiber is cotton followed by long leaf fibers like sisal and bast fibers like jute, flax, hemp and ramie. These leaf and bast fibers are an important unconventional source of fibers which could be analyzed and evaluated for their use in technical textile industry. The purpose of the present research was to extract and characterize fibers from *Yucca elephantine* plant leaves. The fibers were extracted using two methods: water retting and chemically using sodium hydroxide (NaOH). The extracted fibers were characterized for their chemical contents, breaking strength, breaking elongation, fineness, diameter and their moisture content. The extracted fibers were also characterized with FTIR and TGA. The results showed that the extracted fibers had tensile strength of 5.7 cN/tex (water retted) and 7.55 cN/tex (3% NaOH extracted) similar with hemp and sisal fibers. Thermal analysis showed that the fiber is stable up to 290 °C.